

# PATENT ABSTRACTS OF JAPAN

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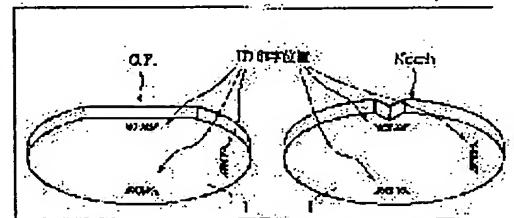
## (54) WAFER ON WHICH ID IS PRINTED, MANUFACTURE OF SEMICONDUCTOR DEVICE AND MANUFACTURE EQUIPMENT THEREFOR

### (57) Abstract:

PROBLEM TO BE SOLVED: To make reading and alignment of a wafer accurate, by printing an ID on the back or the side surface of the wafer or on both the back and the side surface of the wafer.

SOLUTION: In an ID printing method of a wafer 1, a laser beam is concentrically irradiated or an ion beam is irradiated on the back or the side surface of the wafer 1, and an ID is marked on the back or the side surface of the wafer 1. A method irradiating a laser beam on the back or the side surface of the wafer 1, or a method irradiated an ion beam is used as a method printing an ID on the back or the side surface, or on both the back and the side surface of the wafer 1.

1. In the method using a laser beam, a laser beam is irradiated on the back or the side surface of the wafer, a substrate is directly shaved, and letters, marks and bar codes for ID recognition are printed. In the case using an ion bean, an ion-implantation region of Ga, Ge, Au, etc., is formed beforehand on the back or the side surface of the wafer 1, and a thinly concentrated convergent ion beam is cast on the ion-implantation region.



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## PATENT ABSTRACTS OF JAPAN

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(22) Date of filing : 11.04.1995 (72) Inventor : HASHIMOTO MAKOTO

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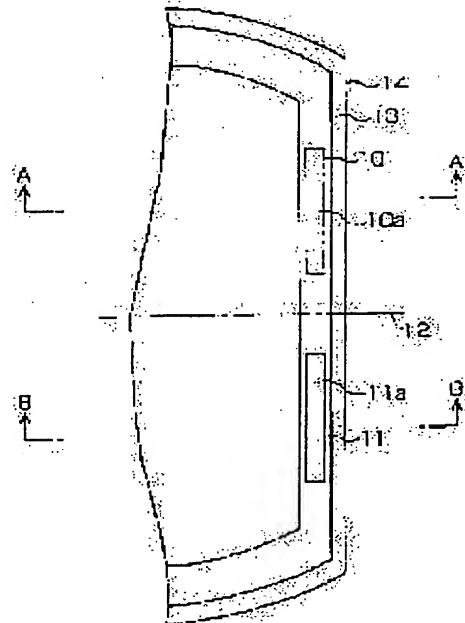
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(54) METHOD FOR MANAGING SEMICONDUCTOR SUBSTRATE OF SOI STRUCTURE, IDENTIFICATION MARK PRINTER, AND IDENTIFICATION MARK READER.

(57) Abstract:

PURPOSE: To manage a semiconductor substrate properly and simply by optically reading an identification mark printed on the exposed surface of the semiconductor substrate by a noncontact system.

CONSTITUTION: An ID 10a of a wafer is printed by a noncontact system using a laser etc., with an ordinary ID printer, on a first printing region 10 provided along an orientation flat section 14 on the peripheral brim of a silicon substrate. By providing the first printing region 10 along the orientation flat section 14, printing processing is facilitated compared to the case where a printing region is provided along a circular section on the peripheral brim of the wafer. Besides, it becomes possible to secure a printing region without reducing a region of the wafer for an element to be assembled, by providing the first printing region 10 in the peripheral brim section of the wafer. The ID 10a printed in the first printing region 10 is read out optically and recognized by using the CCD camera of a usual ID recognizing device. And sheet management of wafers is performed on the basis of this recognized ID 10a.



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